Improving Analytical Capabilities of the California Water Plan

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Overview

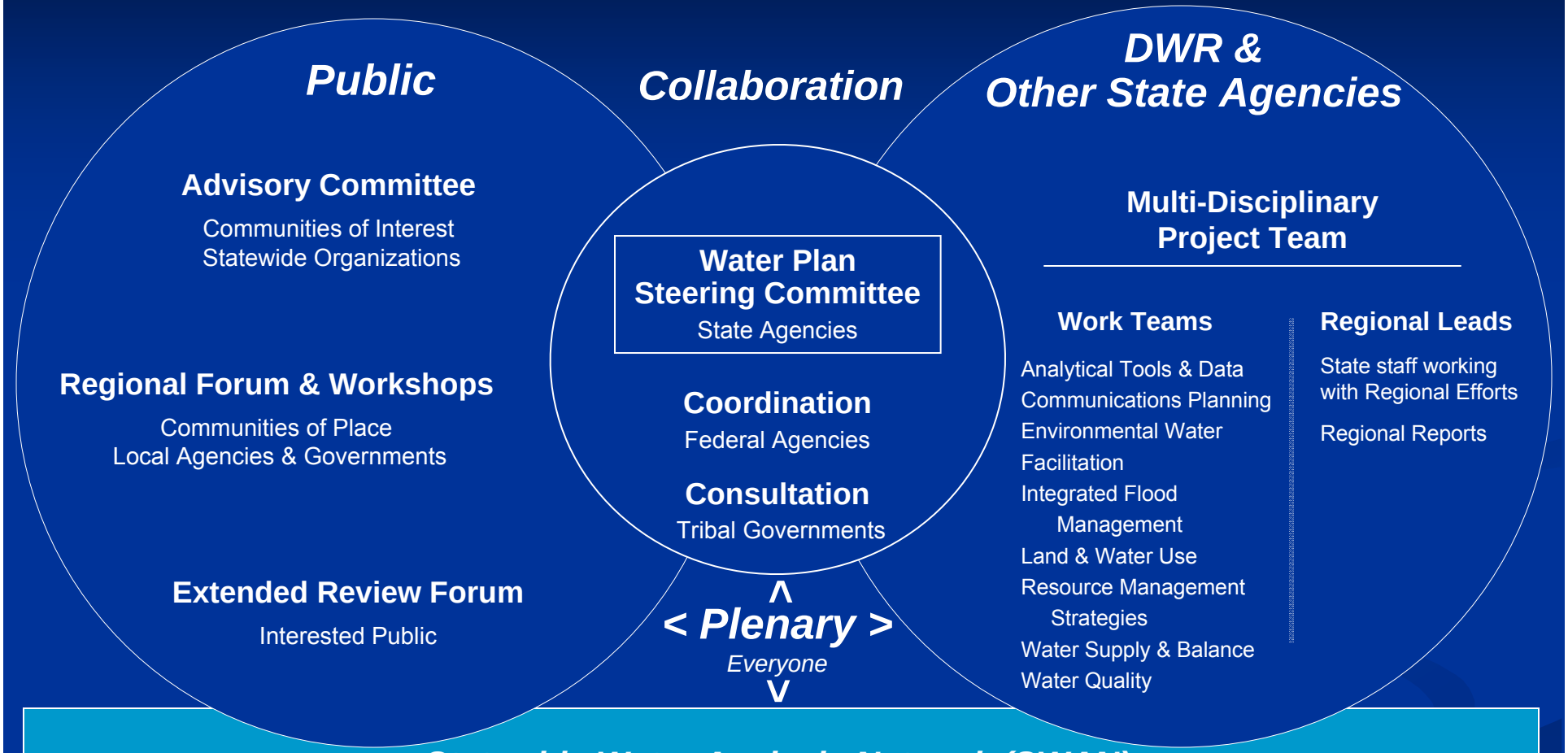
- Describe Statewide Water Analysis Network (SWAN) and its roles in Update 2009
- New planning approach for the Water Plan
- Quantitative deliverables for the Water Plan Update
- Developing a proposal for Update 2009

What is SWAN

Purpose

- Primary technical advisory group for the California Water Plan
  - Provide recommendations on improvements to analytical tools and data
  - Through Water Plan, recommendations will guide other statewide and regional planning efforts
  - Provide feedback on proposals by Water Plan team

California Water Plan Update 2009
Process Guide



Statewide Water Analysis Network (SWAN)

Scientists & Engineers

Information Exchange & Data Integration | **Climate Change** | **Shared Analytical Tools & Methods**

Why a Network?

- Problems identified for Water Plan are not unique
- Solution requires better integration and consistency at federal, state, regional, and local scales
- We have had difficulty reaching consensus on quantitative deliverables
- Expertise and funding are diffuse

How SWAN Can Help

- Build common conceptual understanding of water management system
- Identify appropriate scales for Water Plan analysis
- Develop strategy for making water planning information transparent
- Develop guidelines for integrating information

Needed SWAN Expertise

- Estimating future agricultural, urban, and environmental water demand
- Estimating future management responses
- Considering uncertainty about future climate conditions
- Identifying relationships between management of water, water quality, flood management, and energy
- Data management, visualization, and exchange

SWAN Pilot Studies

- Integrating UWMP's with Water Plan
  - SWAN Workshop (January 2007)
- Common Schematic – TBD
- Common Conceptual Model using Object Oriented Modeling
  - SWAN Workshop (December 2006)

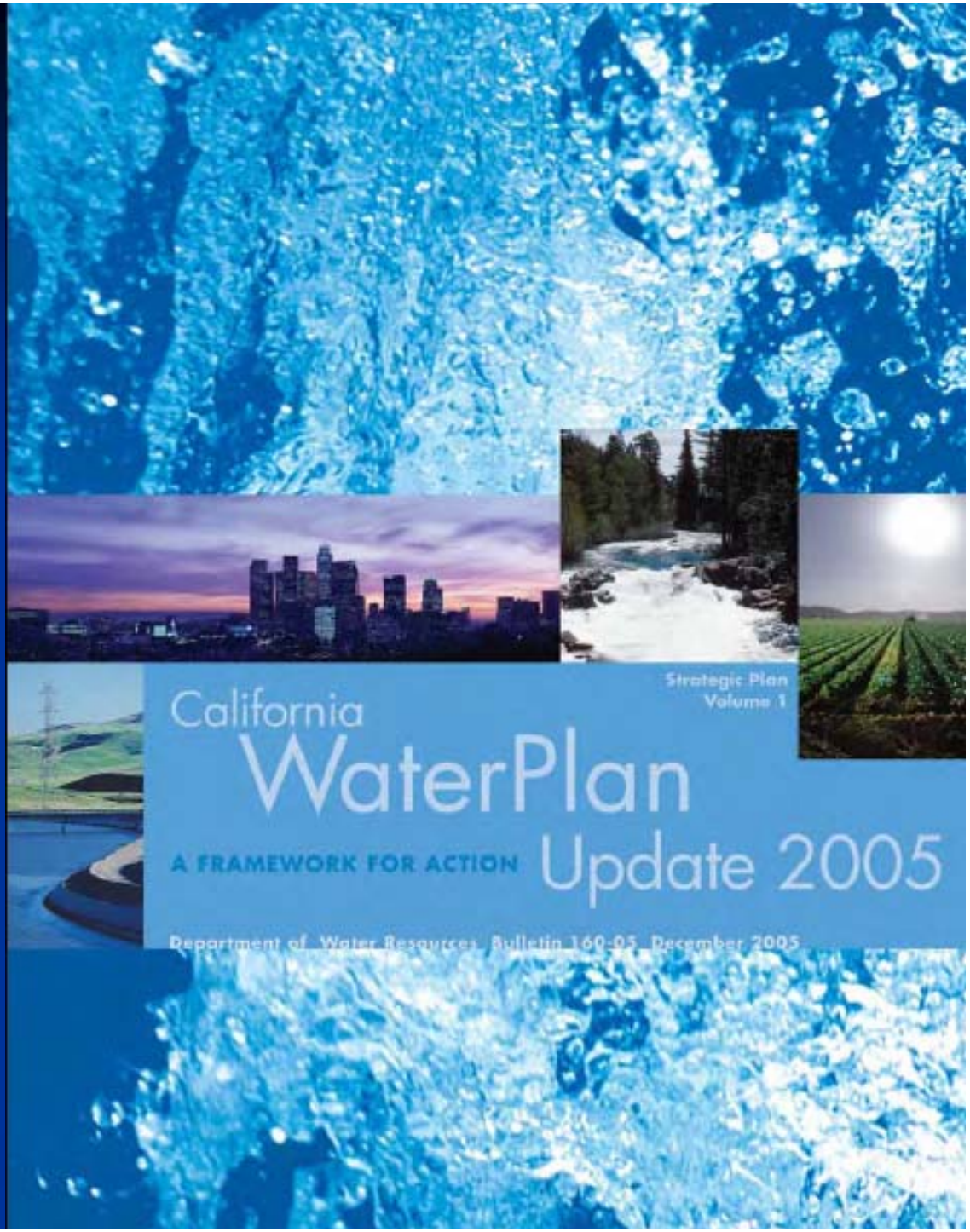
Related Activities

- Southern California Water Demand Study
  - RAND/UCSB (Completed June 2006)
- WEAP Climate Change and Decision Making under Uncertainty
  - IEUA / RAND (Completed June 2007)
- WEAP Climate Change Sac Valley
  - DWR / SEI / NCAR / USEPA (Completed June 2007)
- MOA with Army Corps, IWR
  - (Completed April 2007)

SWAN Activities During Update 2009

- Present results of completed pilot projects
  - SWAN Workshop (September 17th, 2007)
- Implement other pilot studies
- Develop and implement comprehensive strategy Water Plan Update 2009
- Scope out longer term improvements

Outcomes of California Water Plan Update 2005



Recommendation 11
2005 California Water Plan

"DWR and other state agencies must improve data, analytical tools, and information management and exchange needed to prepare, evaluate, and implement regional integrated resource plans and programs in cooperation with other federal, tribal, local, and research entities"

Objectives for Water Plan Analysis

- How does water scarcity affect the economy and all beneficial uses?
- How does water quality affect water management and vice versa?
- How does land use affect water management?

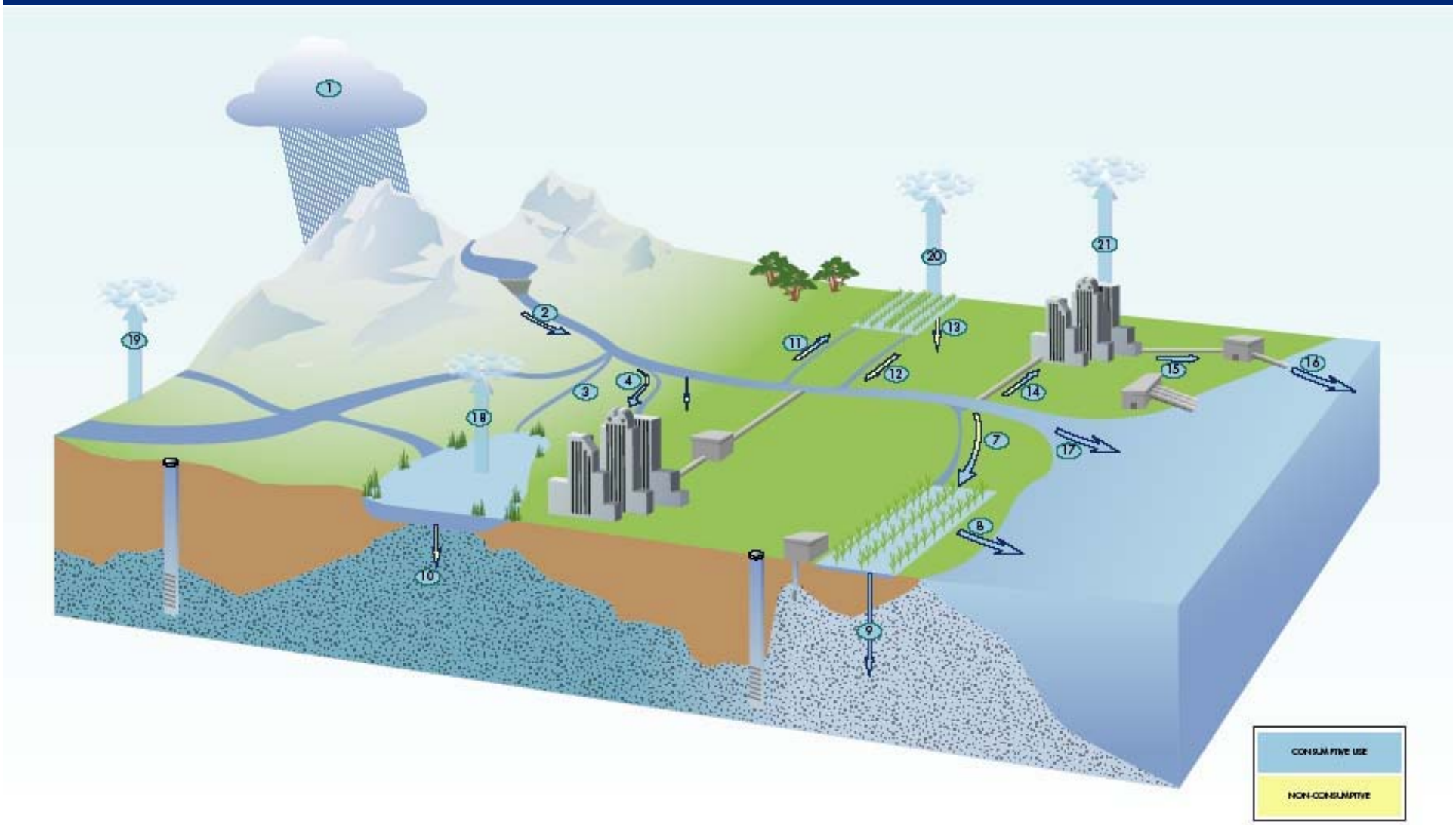
Objectives Continued

- How should local, regional, and state agencies manage water during multiple year droughts?
- How will climate change affect water management?
- What are some of the costs, benefits, and tradeoffs between different water management strategies?

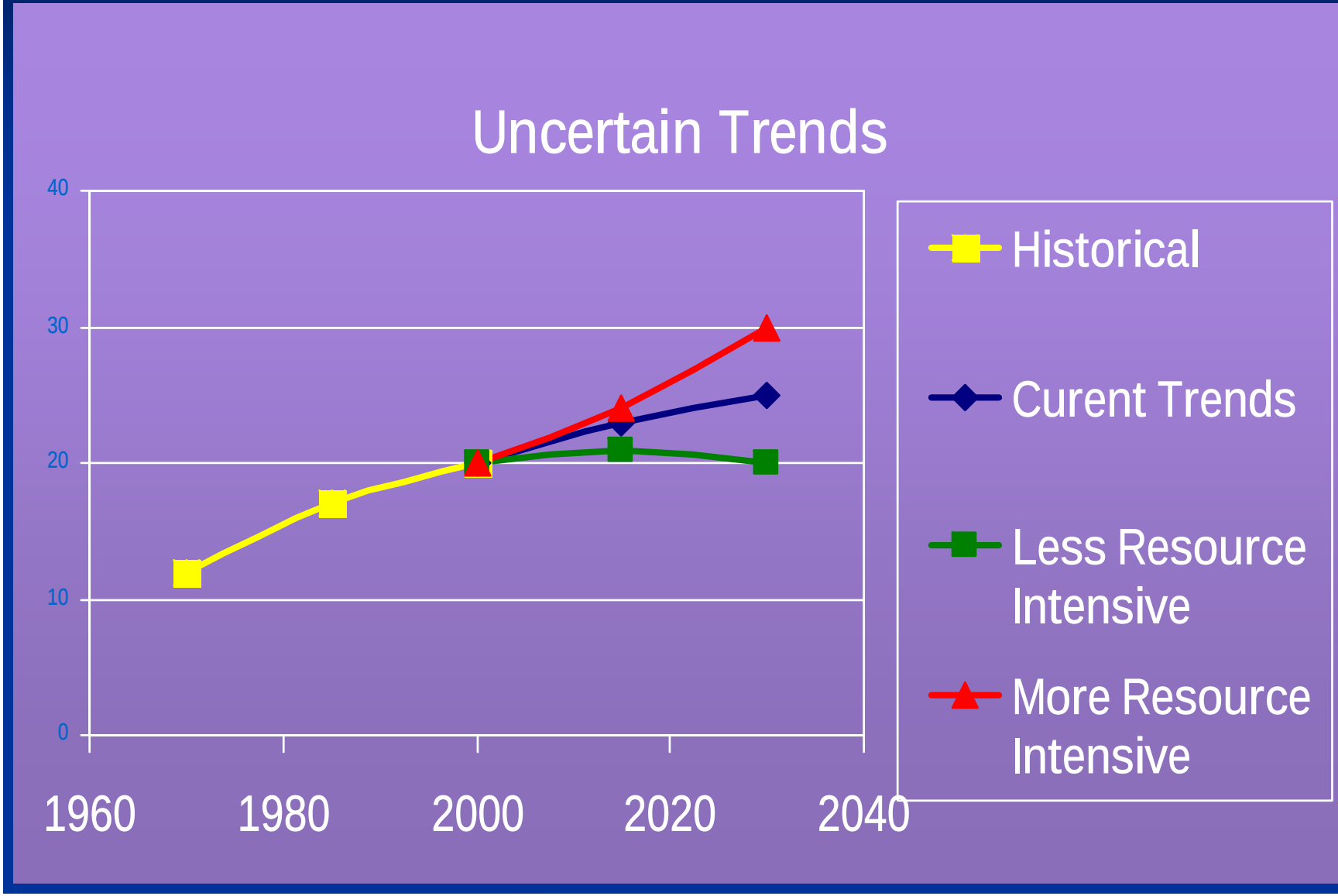
Multiple Quantitative Views

- ***Water Portfolios***
  - Describe where water originates, where it flows, and what it is used for based on recent data
- ***Future Baseline Scenarios***
  - Describe expected changes by 2030 if water managers do not take additional action
- ***Alternative Response Packages***
  - Describe packages of promising actions, predict expected outcomes, and compare performance under each scenario

Water Portfolios



Multiple Future Scenarios



Resource Management Strategies

Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency & Transfers

- Conveyance
- System Reoperation
- Water Transfers

Increase Water Supply

- Conjunctive Management & Groundwater Storage
- Desalination –Brackish & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

Improve Water Quality

- Drinking Water Treatment and Distribution
- Groundwater/Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Urban Runoff Management

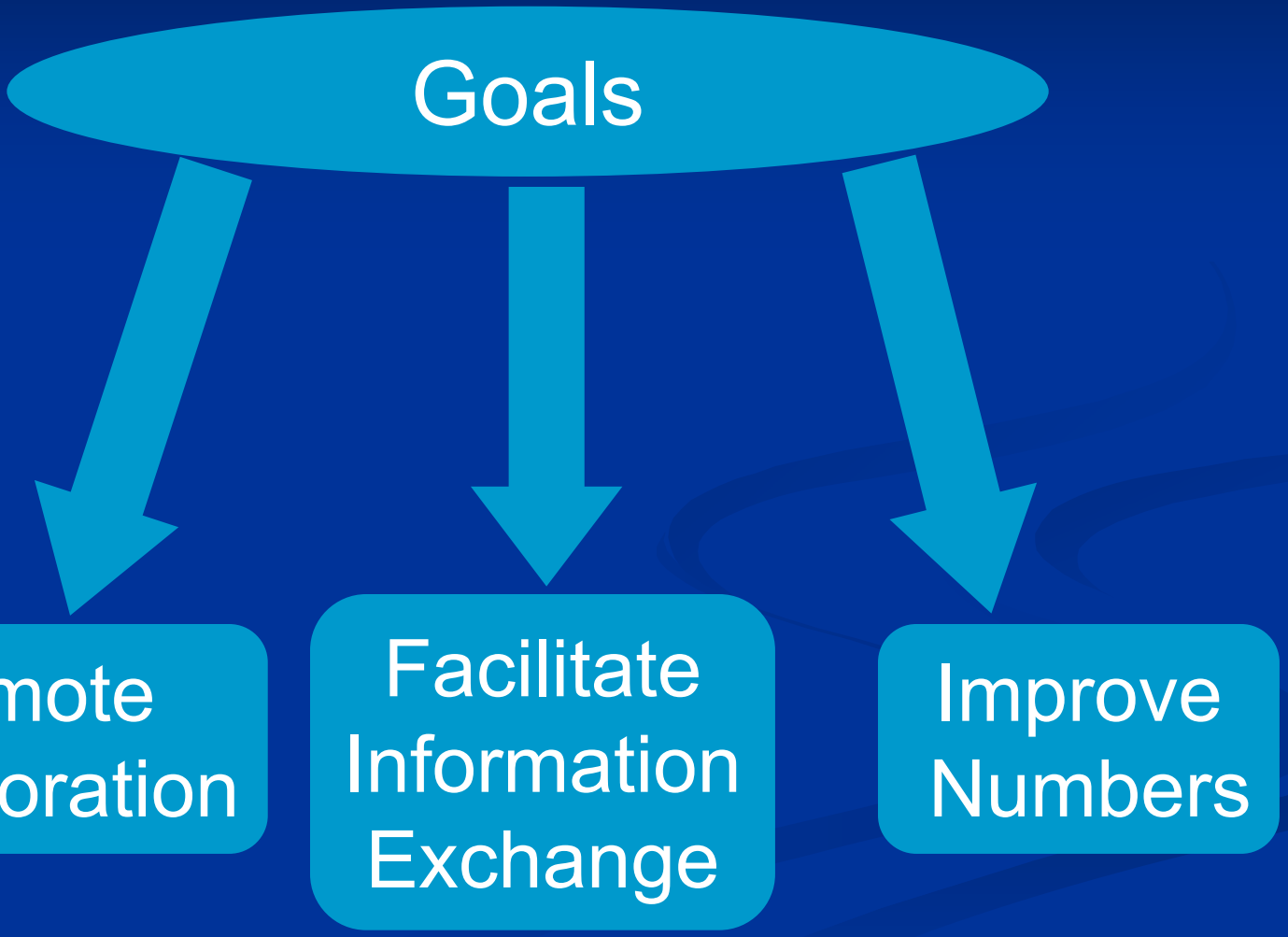
Practice Resource Stewardship

- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- Floodplain Management
- Recharge Areas Protection
- Urban Land Use Management
- Water-Dependent Recreation
- Watershed Management

Update 2005 Parking Lot (items not addressed)

- More local detail for Regional Reports and Water Portfolios
- More groundwater information
- Roll-up Urban Water Management Plans
- Include climate change, water quality, and energy relationships
- Improve rep. of environmental water
- Improve data QA/QC, transparency

Implementation



Applying Shared Vision Planning to Develop a Proposal for Update 2009

What is Shared Vision Planning

Shared Vision Planning incorporates tried and true **planning principles** and **technical analysis** and **collaboration** into a practical forum for making resource management decisions.

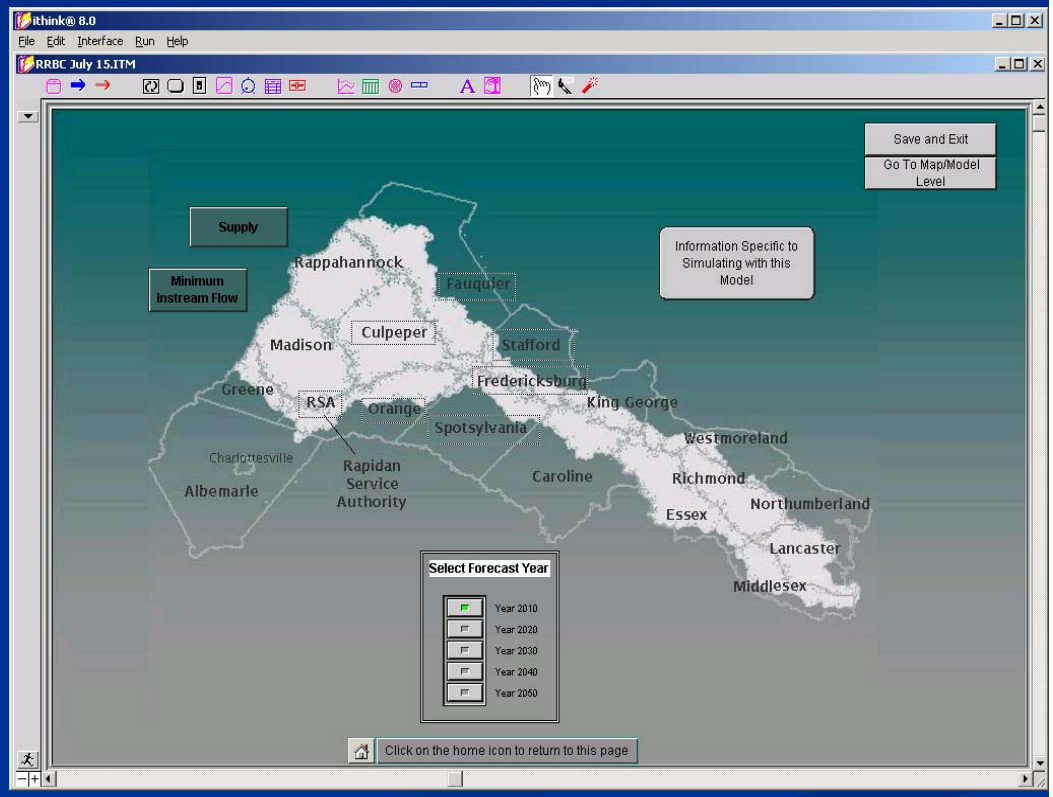
Goal - get agreement on the facts so that the discussion can focus on the value conflicts

How Shared Vision Planning Can Help

- Can be applied to any water resource problem where stakeholders are willing to come to the table
- Allows stakeholders to identify what can be done and what ought to be done
- Focuses on facts and data relationships first, then values and tradeoffs
- Provides a method to structure and facilitate the debate
- Integrates policy, collaboration, and technical analysis

SVP foundations: Technical Analysis Models

- Models are visual, processes transparent
- Public and experts work together
- Process and model help find win-win solutions



Remember to ask: ***"Who will use the model?"*** and ***"How it will be used?"***

Schedule for Developing Proposal

- December 2007 - Draft proposal
  - Integrate water portfolios, scenarios, and responses
  - Apply shared vision planning approach through SWAN
- March 2008 - Final proposal
- December 2008 – Public Review Draft of CWP Update 2009

Reference Information

- **http://www.waterplan.water.ca.gov**
  - Volume 1, CH 4, Update 2005 – Scenarios
  - Volume 2, Update 2005 – Resource Management Strategies
  - Volume 3, Update 2005 – Water Portfolios
  - SWAN
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Questions?
SWAN
Quantitative deliverables
Developing proposal